Stability equations are obtained for a cylindrical sandwich shell consisting of two thin outer layers and a corrugated middle layer. The problems of stability of a curved sandwich panel simply supported along its four edges and of a cylinder under compression are solved.

5. Kurshin, L.M. Stability Under Compression of a Curved Cylindrical Sandwich Panel the Transverse Edges of Which Are Fastened While the Longitudinal Edges Are Simply Supported 69

This paper analyzes the stability of a cylindrical sandwich panel with a light isotropic core under uniform longitudinal compression for a case where the transverse edges are fastened and the longitudinal edges are simply supported.

6. Kurshin, L.M. On the Calculation of Bending Stiffness of the Outer Layer of a Curved Sandwich Panel Under Longitudinal Compression 80

A formula is obtained for calculating curved sandwich panels under longitudinal compression with consideration of the natural bending stiffness of the outer layers. The domain is established in which the assemption of this stiffness being equal to zero is applicable.

7. Galkin, S.I. Torsion of an Open Cylindrical Shell Reinforced by Bulkheads 85

Torsion of an open cylindrical shell reinforced by bulkheads is considered in this paper. The solution is obtained without introduction of additional hypotheses aside from the general assumptions associated with representing the operation of an open shell as momentless. On the basis of the solution the limits of applicability are shown of the hypothesis of warping which has been widely used in problems of calculating open shells under torsion.

8. Galkin, S.I. Torsion and Bending of a Circular Cylindrical Shell Reinforced by Elastic Bulkheads 102

This paper investigated the state of stress of a circular cylindrical shell which is reinforced by elastic bulkheads and loaded along the edges by an arbitrary system of axial and tangential forces. Calculation formulas are obtained which permit calculating all elastic-deformation components for various boundary conditions at the edges of the shell. The effect of self-balancing forces on the state of stress of the shell as a function of the stiffness of the bulkheads was investigated. It is shown that the self-balancing stresses do not decay very rapidly; the zone of their propagation into the depth of the shell is practically equal to the length of the contour of the transverse cross section of the shell. A calculation example is given for a shell under torsion allowing for elasticity of the bulkheads.

9. Nazarov, N.I., M.S. Povarnitsyn, and Ye. V. Yurlova. Calculation of Unsteady Temperatures in an I-beam Element 142

This paper presents two methods of calculating the temperature fields in an I-beam element (representing, in this particular case, a typical part of a multilongeron

wing): 1) the method of direct integration of the heat-conduction equations, and 2) the method of elementary equilibrium. Cases of symmetrical and unsymmetrical heating of such elements through the outer flange surfaces are considered as well as the case of different thicknesses of flanges. Solution of the problem is given under the assumption that physical characteristics of the material and the heat-transfer coefficients do not depend on temperature variation.

AVAILABLE: Library of Congress

IS/mg
11-24-59

SOV/147-59-2-7/20

AUTHORS: Galkin, S.I., Kabanov, V.V. and Lyashenko, S.S.(Novosibirsk)

TITLE: Experimental Investigation of Bending of a Cantilever (Circular) Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by a Concentrated Force at the Free End (Eksperimental'noye issledovaniye karkasirovannoy krugovoy tsilindricheskoy obolochki s bol'shim pryamougol'nym vyrezom pri izgibe sosredotochennoy siloy)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 2, pp 49-61 (USSR)

ABSTRACT: The experiments were carried out on a shell of 600 mm diameter, 3800 mm long, plated with D16AT of 0.8 mm thickness. The shell was stiffened on the outside by longitudinal stringers (pressed dural angles, Pr 100-3, of a cross-sectional area of 0.434 cm^2) and on the inside by ribs spaced at 130 mm. The total length of the cut-out was 1000 mm. The general lay-out of the shell is shown in Fig 1, while Fig 2 shows the cross-section of the rib. Along their whole length the longitudinal edges of the cut-out were reinforced by either channels with flat fillets or

Card 1/5

Experimental Investigation of Bending of a Cantilever (Circular) Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by a Concentrated Force at the Free End

simply by flats, as shown in Fig 3. In the plane of symmetry of the shell (i.e. with respect to cut-out) two longitudinal joints were made. One end of the shell was firmly fixed (by means of a fitting attached to a steel plate) and the shell was loaded at the other (free) end, the force being applied with the aid of cables to a short steel cylinder which was fitted into the shell (see Fig 1). The force was measured by a spring dynamometer. Two different directions of loading were used, as shown in Fig 4. In the first case the force vector was in the plane of symmetry of the structure and in the second case, in the axial plane perpendicular to the plane of symmetry. Fig 5 shows the complete rig ready for experiments. The results of experiments are presented in Figures 7 to 14. The graphs also include the theoretical curves obtained from relations developed in Ref 1. All experimental data and the computational values refer to the same loading, viz 1000 kg. Figures 7 to 10

Experimental Investigation of Bending of a Cantilever (Circular) Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by a Concentrated Force at the Free End

refer to the symmetric loading (case 1) and Figures 11 to 14 refer to the asymmetric loading (case 2) as follows: Fig 7 shows the tangential stresses in the open portion of the shell (at sections 1 and 4, see Fig 1). It is seen that they do not remain constant and are greatest between the 8th and 9th stringers. It also appears that the strength of the longitudinal reinforcement on the edges of the cut-out has essentially only a local effect on the magnitude of stresses in the panel at the boundary of the cut-out. There is good agreement between the calculated and the experimental results. From Fig 8, which refers to sections 5 and 7, it is seen that in the closed portion of the shell the distribution of tangential stresses is extremely non-uniform, showing even local concentration of stresses. The peaks in the stress curves become less sharp further away from the cut-out.

Experimental Investigation of Bending of a Cantilever (Circular) Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by a Concentrated Force at the Free End

The strength of the reinforcement on the edges of the cut-out has an insignificant influence on the distribution of the tangential stresses. Fig 9 shows the normal stresses at sections 1, 4 and 5, while in Fig 10 the normal stress along the stringers Nr 1 and Nr 9 are shown, the last one being the reinforcement of the cut-out edge. Again there is good agreement between the experiment and the theory of Ref 1. For the case of the asymmetric loading the conclusions may be summarised as follows: The distribution of tangential stresses in the open part of the shell (Fig 11 refers to sections 1 and 4) again is not constant. The strength of the reinforcement on the cut-out edge again has only a local effect, influencing the stresses in the panel between the 8th and 9th stringers. Agreement between the experiment and the theory of Ref 1 is much poorer than in the previous case. In the closed part of the shell the distribution of tangential stresses is also non-uniform (Fig 12, sections 5 and 7).

Experimental Investigation of Bending of a Cantilever (Circular) Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by a Concentrated Force at the Free End

The non-uniformity becomes less intense further away from the cut-out into the closed part of the shell. The strength of the reinforcement has fundamentally a local effect influencing only the maximum stress arising in the panel between the 9th and 10th stringers. Agreement between the calculated normal stresses and the experimental values (Fig 13) is good at Section 1 (at the middle of the cut-out) but poor at the boundary of the cut-out (section 4). Fig 14 represents the distribution of normal stresses in the stringers Nr 9 and Nr 5. There are 14 figures and 1 Soviet reference.

SUBMITTED: October 21, 1958

S/124/62/000/010/013/015
D234/D308

24.4200

AUTHOR: Galkin, S. I.

TITLE: Torsion of an open cylindrical shell reinforced by frames

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 10, 1962, 9, abstract 10V59 (In collection: Vopr. rascheta elementov aviats. konstruktsiy, no. 1, M., Oborongiz, 1959, 85-101)

13

TEXT: The author considers the solution of the problem of stressed and deformed state of an open momentless cylindrical shell subject to torques applied along the ends. The longitudinal edges are reinforced by beams, the shell consists of several sections reinforced by frames at their joints. The author uses difference-differential equations obtained by L. I. Balabukh and integral boundary conditions. A complete solution is given for a shell consisting of two sections. The solution is illustrated by graphs of distribution of forces along the length of the shell with respect to va-

Card 1/2

Torsion of an open ...

rious parameters. On the basis of numerical examples the author determines the limits of applicability of the theory of thin rods with open profile. The position of the center of torsion is determined. [Abstracter's note: Complete translation.]

Card 2/2

S/124/62/000/011/015/017
D234/D308

10.6100

AUTHOR: Galkin, S. I.

TITLE: Torsion and bending of a circular cylindrical shell reinforced by elastic frames

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1962, 9, abstract 11V70 (In collection: Vopr. rascheta elementov aviats. konstruktsiy. no. 1; M., Oborongiz, 1959, 102-141)

TEXT: The author considers a circular cylindrical momentless shell reinforced by elastic rings and loaded at the end sections by axial and tangential forces. The problem of determining the forces in the shell and the bending moments in the rings is solved in ordinary trigonometrical series. For the series coefficients difference equations are obtained in which the number of the ring is the independent variable. For a regular system of rings solutions of the difference equations are obtained in closed form with various external loads. Stressed state of a shell with elastic rings is in-

Card 1/2

Torsion and bending ...

S/124/62/000/011/015/017
D234/D308

vestigated in the case of a self-balanced force system applied to end sections. Tables and graphs illustrate the damping of self-balanced stress system with increasing distance from the loaded edge. It is shown that the intensity of damping depends considerably on flexural rigidity of the rings. [Abstracter's note: Complete translation.]

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Card 2/2

BOROVSKIY, P. V.

PHASE I BOOK EXPLOITATION SOV/6206

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konferentsii po teorii plastin i obolochek, 24-29 oktyabrya 1960. (Transactions of the Conference on the Theory of Plates and Shells Held in Kazan', 24 to 29 October 1960). Kazan', [Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary; N. A. Alumyae, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev, A. L. Gol'denveyzer, N. A. Kil'chevskiy, M. S. Kornishin, A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy, R. G. Surkin, and A. P. Filippov. Ed.: V. I. Aleksagin; Tech. Ed.: Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and engineers who are interested in the analysis of strength and stability of shells.

Card 1/14

75

Transactions of the Conference (Cont.) SOV/6206

COVERAGE: The book is a collection of articles delivered at the Conference on Plates and Shells held in Kazan' from 24 to 29 October 1960. The articles deal with the mathematical theory of plates and shells and its application to the solution, in both linear and nonlinear formulations, of problems of bending, static and dynamic stability, and vibration of regular and sandwich plates and shells of various shapes under various loadings in the elastic and plastic regions. Analysis is made of the behavior of plates and shells in fluids, and the effect of creep of the material is considered. A number of papers discuss problems associated with the development of effective mathematical methods for solving problems in the theory of shells. Some of the reports propose algorithms for the solution of problems with the aid of electronic computers. A total of one hundred reports and notes were presented and discussed during the conference. The reports are arranged alphabetically (Russian) by the author's name.

Card 2/14

Transactions of the Conference (Cont.) SOV/6206

Card 5/14

L 37122-66 EWP(k)/EWT(d)/EWT(m)/EWP(w)/EWP(v) LJP(c) WW/EM/GD

ACC NR: AT6011759 SOURCE CODE: UR/0000/65/000/000/0226/0246

AUTHOR: Galkin, S. I.

ORG: None

TITLE: The twisting of framed cylindrical shell with long right-angle notch

SOURCE: Raschety elementov aviatsionnykh konstruktsiy, vyp. 3: Trekhsloynyye paneli i obolochki (Calculation of aircraft construction elements, no. 3: Sandwich panels and shells). Moscow, Izd-vo Mashinostroyeniye, 1965, 226-246

TOPIC TAGS: cylindric shell, shell dynamics, shell deformation, reinforced shell structure

ABSTRACT: In this paper the problem of the twisting of a circular frame-stretched cylindrical shell with a reinforced rectangular notch, previously discussed in two earlier works by the same author, is generalized to apply to the case of a notch whose length extends to 2N segments. The solution to the problem takes into account the elasticity of the transverse trusses and their discrete positioning. The skin in this case works as a thin non-moment shell, receiving axial and tangential linear forces; the Poisson factor is assumed to be zero. The transverse trusses, continuously attached along the contour

Card 1/2 UDC 629.13.011.1:62-43:539.4

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ACC NR: AT6011759

with the skin, have finite flexural rigidity in their plane and zero flexural rigidity outside their plane. The radius of the central axis of the transverse truss is assumed equal to the radius of the skin midsurface. The problem is reduced to the solution of a system of differential-difference equations, with the method of solution resolving itself to the following. At first a solution is sought to the equations for the closed part, separated from the shell by a section passing between the trusses 1.0 of the open part; this system is then solved for the open part separated from the shell by sections passing between trusses 0.1 of the closed part. The solutions obtained separately for the closed and open parts are then joined so as to satisfy the coupling conditions for the 0-th and 0_1-th trusses located at the interfaces of the closed and open parts of the skin. Orig. art. has: 1 figure and 63 formulas.

SUB CODE: 13 / SUBM DATE: 25Oct65 / ORIG REF: 003

Card 2/2 af

ACC NR: AP7002700 SOURCE CODE: UR/0424/66/000/006/0136/0138

AUTHOR: Galkin, S. I. (Novosibirsk); Levitskaya, T. Ye. (Novosibirsk)

ORG: none

TITLE: Investigating the effect of frame elasticity on the state of stress in a circular cylindrical shell with a rectangular cutout under torsion

SOURCE: Inzhenernyy zhurnal. Mekhanika tverdogo tela, no. 6, 1966, 136-138

TOPIC TAGS: cylindric shell, stiffened shell, weakened shell, ~~shell torsion, cylindrical shell torsion~~ STRUCTURE ^ STRESS DISTRIBUTION, TORSION STRESS

ABSTRACT:
The results of calculating the stress distribution in a circular cylindrical shell stiffened by transverse frames and weakened by a rectangular cutout (see Fig. 1) subjected to torsion, are presented. The design formulas for

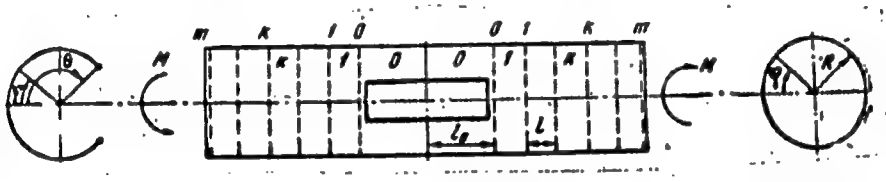

Fig. 1.

Card 1/2 UDC: none

ACC NR: AP7002700

such a problem were derived previously by S. I. Galkin (Izv. Sib. Otd. AN SSSR, no. 4, 1960; and Trudy konferentsii po teorii plastin i obolochek, 1961, Kazan'). The distributions of shear, normal, and tangential stresses in the middle portion of the shell (in the neighborhood of the cutout) and in frame-stiffened portions were calculated from these formulas on the M-20 electronic digital computer for 38 versions of the shell structure with geometry and stiffness parameters varying in a wide range, except $\theta = 135°$ and $l/R = 0.5$. The calculation results are plotted in several diagrams, and the depdendence of stresses on these parameters is discussed. The effect of rigidity of frames, especially of frames 0, on the state of stress in the shell, mainly on the distribution of shear and tangential stresses along the longitudinal (reinforced) edges of the cutout and around its corners is discussed in detail. The different behavior of these stresses within the open and frame-stiffened portions of the shell caused by the variation in the length of the cutout combined with the variations in the rigidities of frames, as well as the locations of maximum stresses in shells with short and large ($l_0/R < 1$ and $l_0/R > 1$, respectively) cutouts is pointed out. A simultaneous progressive increase of stresses (in both weakened and stiffened portions of the shell) with increasing width of the cutout, irrespective of the frame stiffness is noticed. The effect of stiffeners along the longitudinal edges of the cutout on the stress distribution, and their maximum rational cross-section areas are also examined. The dying-out of stresses (which are caused by the presence of a cutout) in the stiffened portion of the shell, and their practical disappearance at a distance of 2 to 2.5R from the frame 0 is mentioned. Orig. art. has: 7 figures.

Card 2/2 SUB CODE: 20/ SUBM DATE: 20May66/ ORIG REF: 003/ ATD PRESS: 5113

GALKIN, S.L.

Movement of particles in a centrally symmetrical static field in the general theory of relativity. Izv.vys.ucheb.zav.; fiz. no.3:54-62 '63. (MIRA 16:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

PUPKO, V.V., dotsent; GALKIN, S.R., assistent.

Electrical method of igniting fuel in charging locomotive boilers.
Trudy RIIZHT no.17:54-59 '53. (MLRA 9:6)
(Locomotive boilers)

GALKIN, S.R.

Galkin, S.R.

"Investigation of the Operation of Locomotive Syphons." Leningrad Order of Lenin Inst of Railroad Transport Engineers imeni Academician V. N. Obraztsov. Leningrad, 1955. (Disseration for the Degree of Candidate in Technical Science.)

Knizhnaya Letopis': No. 27, 2 July 1955

GAIKIN, T.

Adaptation for cutting out gaskets. Khol. tekh. 29, No 2, 1952.

1. GALKIN, T.

2. USSR (600)

4. Compressors

7. Device for testing safety valves on horizontal compressors. Khoi,tekh. 29 no. 4, 1952

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

GALKIN, T.

Valves

Modernizing the Ludlow gate valve. Khol. tekh. 30, No. 1, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. UNCLASSIFIED.

GALKIN, T., glavnyy mekhanik.

An improved coupling. Khol.tekh. 30 no.2:66 Ap-Je '53. (MLRA 6:7)

1. Moskovskiy kholodil'nik no.9. (Couplings)

GALKIN, T.

Oil filters of a 2-AG ammonia compressor. Khol.tekh.31 no.1:64 Ja-Mr '54. (MLRA 7:4)

1. Moskovskiy kholodil'nik No.9. (Compressors)

GALKIN, T.

Welding babbit flanges on pistons of horizontal compressors. Khol. tekh. 32 no.1:64-65 Ja-Mr '55. (MLRA 8:7)
(Compressors)

GALKIN, T.

Improving ammonium valves. Khol. tekh. 32 no.3:58 Jl.- S '55.
(MLRA 9:1)
(Refrigeration and refrigerating machinery)

GALKIN, T.

Improved method for the conservation of lubricants. Khol.tekh. 32 no.4:61 O-D '55. (MIRA 9:4)
(Refrigeration and refrigerating machinery)(Lubrication and lubricants)

GALKIN, T.

Tank for lubricant decantation from the oil collecting basin. Khol. tekh.33 no.2:64 Ap-Je '56. (MLRA 9:9)
(Moscow--Lubrication and lubricants)

SOLODOVNIKOV, P.; GALKIN, V.

Organizing the establishment of work norms in the wool and silk industries. Sots. trud 6 no.9:90-94 S '61. (MIRA 14:9)
(Moscow Province--Wool industry--Production standards)
(Moscow Province--Silk manufacture--Production standards)

GALKIN, V.

Let us more quickly eliminate shortcomings in establishing technical standards. Sots.trud 7 no.1:71-73 Ja '62. (MIRA 15:4)

(Vologda Province—Production standards)

GALKOV, V.A., inzhener.

Increasing the efficiency of river maintenance operations. Rech. transp. 15 no.5:23-24 My '56. (MLRA 9:8)
(Rivers--Regulation)(Inland water navigation)

GALKIN, V.A., inzhener.

Correcting the settlement of a wall in the machine room of a state district electric power station. Elek.sta. 27 no.5:51-52 My '56. (MLRA 9:8)

(Foundations)

GALKIN, Vladimir Aleksandrovich; SIPILIN, P.M., nauchnyy red.; STOLYARSKIY, L.L., red.; KAMOLOVA, V.M., tekhn.red.

[Device for assembling and welding hull structures] Prisposobleniia dlia sborki i svarki korpusnykh konstruktsii. Leningrad, Gos. soiuznoe izd-vo sudostroit.promyshl., 1960. 133 p. (MIRA 13:4)
(Shipbuilding--Equipment and supplies)
(Hulls (Naval architecture)--Welding)

PHASE I BOOK EXPLOITATION SOV/4875

Galkin, Vladimir Aleksandrovich

Prisposobleniya dlya sborki i svarki korpusnykh konstruktsiy (Assembly and Welding Devices for Hull Structures [of Ships]) Leningrad, Sudpromgiz, 1960. 133 p. 2,750 copies printed.

Scientific Ed.: P.M. Sipilin; Ed.: L.L. Stolyarskiy; Tech. Ed.: V.M. Kamolova.

PURPOSE: This book is intended for designers, process engineers, and foremen concerned with the design, manufacture and operation of assembly and welding accessories. It may also be used by students at schools of higher education and tekhnikums.

COVERAGE: The author describes devices used in the assembly and welding of ship hull sections and discusses the purpose, classification, and design of these devices. Methods for determining the requirements these devices must meet and the amount of metal consumed in their manufacture are considered. The effect of distortion welding of sections on the construction of cradles is explained and methods are given for calculating the required number of platens, cradles, and

Card ~~1/4~~

assembly areas necessary for assemblying and welding the sections. No personalities are mentioned. There are 9 references, all Soviet.

TABLE OF CONTENTS:

S/137/62/000/005/131/150
A160/A101

AUTHORS: Mikhaylov, M. M., Fedorenko, L. I., Myshak, N. V., Galkin, V. A.

TITLE: The welding of the stainless 1 X 18H 9T (1Kh18N9T) steel with a tungsten electrode in a nitrogen atmosphere

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 16, abstract 5E72 ("Tr. Sredneaz. politekhn. in-ta", 1961, no. 15, 102 - 106)

TEXT: A process of welding stainless steels in N_2 atmosphere was worked out, securing not only high mechanical properties of joints, but also eliminating intercrystalline corrosion. All test pieces were butt-welded with the help of a НИАМ АР+3Б (NIAM AR+3B) torch. The experiments yielded the following results: 1) the main difficulties during the arc-welding in N_2 with a W-electrode, such as the bubbling of the bath, seam porosity and the high consumption of electrodes, are not caused by the disintegration of unstable W-nitrides, but by the presence of O_2 in the arc burning zone. 2) The arc-welding in N_2 with a W-electrode takes a normal course and secures a high-quality seam in case N_2 does not contain more than 0.2% O_2. 3) A waste of C is noted during the arc-welding in

Card 1/2

The welding of...

N_2 with a W-electrode. This is a decisive factor for decreasing the tendency of the seam to intercrystalline corrosion. 4) The arc-welding in N_2 increases the efficiency of the process by 30% and decreases labor costs 15 times - in comparison to argon arc-welding. The arc-welding in N_2 does not deteriorate the qualities of the products.

V. Tarisova

[Abstracter's note: Complete translation]

Card 2/2

GALKIN, V.A.

Collective of communist labor. Put' i put.khoz. 6 no.5:39 '62. (MIRA 15:4)

1. Zamestitel' nachal'nika Krichevskoy distantsii Belorusskoy dorogi.

(Railroads—Employees)

GALKIN, V.A.

Brigade method of operating ring spinning machinery in wool cloth manufacture. Tekst.prom. 22 no.4:5-7 Ap '62. (MIRA 15:6)

1. Nachal'nik otdela truda i zarabotnoy platy Upravleniya sherstyanoy i shelkovoy promyshlennosti Moskovskogo oblastnogo soveta narodnogo khozyaystva.
(Woolen and worsted spinning)

GALKIN, V.A., inzh.

Redesigning and testing of a hydraulic piston compressor.
[Trudy] LMZ no.10:310-314 '64. (MIRA 18:12)

GALKIN, V. A.

N/5
644
.GI

Mekhanizmy patologicheskikh reaktsiy [Mechanisms of pathological reactions]

Leningrad, Medgiz, 1955. 498 P. Illus., Tables. Includes Bibliographies.

[illegible], V. A.

Galkin, V. A.

"Blood-letting in Hypertonic Disease." First Moscow Order of Lenin Medical Inst. Moscow, 1955 (Dissertation for the degree of Candidate in Medical Science)

SO: Knizhnaya letopis' No. 27, 2 July 1955

GALKIN, V.A., kandidat meditsinskikh nauk

Bloodletting by venesection and leeches in hypertension. Terap. arkh. 28 no.4:16-23 '56. (MIRA 9:9)

1. Iz fakul'tetskoy terapevticheskoy kliniki sanitarno-gigiyenicheskogo fakul'teta (dir.-prof. A.G.Gukasyan) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.

(HYPERTENSION, ther.
blood letting & blood extraction with leeches)
(LEECHES,
ther. use in hypertension for blood letting)

GALKIN, V.A.

GALKIN, V.A.

Diuretic qualities of small doses of mercusal in cardiac decompensation. Sov.med. 21 no.9:54-56 S '57. (MIRA 11:1)

1. Iz fakul'tetskoy terapevticheskoy kliniki sanitarno-gigiyenicheskogo fakul'teta (zav. kafedroy - prof. A.G.Gukasyan) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.
(DIURETICS, ther.use
mersalyl theophyllinate in congestive heart failure (Rus))

GALKIN, V.A.

GALKIN, V.A., inzh.

Improving sanitary conditions in welding shops. Bezop. truda v prom. 2 no.1:30-31 Ja '58. (MIRA 11:1)
(Electric welding--Safety measures)

IVANOVA-NEZNAMOVA, A.Yu, dots., GALKIN, V.A. (Moskva)

Use of securinine in internal diseases. Klin.med. 36 no.9:135-137 S'58 (MIRA 11:10)

1. Iz fakul'tetskoy terapevticheskoy kliniki (dir. - prof. A.G. Gukasyan) sanitarno-gigiyenicheskogo fakul'teta I Moskovskogo ordena Lenina meditsinskogo instituta im. I.M. Sechenova.

(ALKALOIDS, ther. use
securinine in hypothension (Rus))
(HYPOTENSION, ther.
securinine (Rus))

GALKIN, V.A.; CHECHULIN, A.S. (Moskva)

Experimental production of cholecystitis. Pat.fiziol. i eksp. terap. 3 no.1:78-79 Ja-F '59. (MIRA 12:2)

1. Iz TSentral'noy nauchno-issledovatel'skoy laboratorii im. S.I. Chechulina I Moskovskogo ordena Lenina meditsinskogo instituta I.M. Sechenova.
(CHOLECYSTITIS, experimental induction (Rus))

ARKHANGEL'SKAYA, L.N.; GALKIN, V.A.; GRIGORENKO, R.V.; LEVTOVA, K.Z.; CHECHULIN, A.S.; GARVEY, N.N., red.; RAYKO, N.M., tekhn.red.

[They serve the motherland; tenth anniversary of the graduation of physicians at the I.M.Sechenov First Moscow Medical Institute in 1949] Oni sluzhat Rodine; k 10-letiiu vypuska vrachei 1-go MOLMI imeni I.M.Sechenova 1949 g. Moskva, 1960. 81 p. (MIRA 14:6)

(MOSCOW--MEDICAL COLLEGES)

GALKIN, V.A.

Use of neodicoumarin in myocardial infracts; clinical and experimental observations. Terap.arkh. 32 no.1:18-23 Ja '60. (MIRA 13:10)

(HEART—INFRACTION) (COUMARIN)

GALKIN, V.A., kand.med.nauk (Moskva)

Public health in the Kingdom of Yemen. Sov. zdrav. 21 no.3: 79-82 '62. (MIRA 15:3)

(YEMEN--PUBLIC HEALTH)

GALKIN, Vsevolod Aleksandrovich; LAZAREV, M.S., otv. red.; BIRYUKOV, V.V., red. izd-va; MIKHLINA, L.T., tekhn. red.

[In Yemen; Soviet physician's notes] V Iemene; zapiski sovetskogo vracha. Moskva, Izd-vo vostochnoi lit-ry, 1963. 104 p. (MIRA 16:9)
(Yemen--Social conditions) (Yemen--Public health)

GALKIN, Vsevolod Aleksandrovich, dots.; GUKASYAN, A.G., prof., zasl. deyatel' nauki, red.

[Cholecystitis in the clinic for internal diseases] O kholetsistitakh v klinike vnutrennikh boleznei. Pod red. A.G. Gukasiana. Moskva, 1-i Mosk. med. in-t, 1963. 108 p. (MIRA 17:2)

1. Zaveduyushchiy fakul'tetskoy terapevticheskoy klinikoy sanitarno-gigiyenicheskogo fakul'teta Moskovskogo meditsinskogo instituta imeni I.M.Sechenova (for Gukasyan).

GALKIN, V.A. (Moskva)

History of the study of clinical aspects of chronic alcoholism.
Trudy Gos. nauch.-issl. inst. psikh. 38:442-448 '63
(MIRA 16:11)

GALKIN, V.A.

Some aspects of the nutrition of the population of Yemen.
Vop. pit. 22 no.3:82-83 My-Je '63. (MIRA 17:8)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. A.G. Gukasyan) sanitarno-gigiyenicheskogo fakul'teta I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

GALKIN, V.A.

Appearance of pathological liver changes in experimental cholecystitis. Pat. fiziol. i eksp. terap. 8 no.4:68 Jl-Ag '64. (MIRA 18:2)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya imeni Chechulina (zav. A.S. Chechulin) i kafedra fakul'tetskoy terapii sanitarno-gigiyenicheskogo fakul'teta (zav.- prof. A.G. GukasYan) I Moskovskogo ordena Lenina instituta gematologii i perelivaniya krovi (dir.- dotsent A.Ye. Kiselev) Moskva.

GALKIN, Vsevolod Aleksandrovich

[Soviet physicians in Yemen] Sovetskie vrachi v Iemene. Moskva, Meditsina, 1964. 36 p. (MIRA 17:5)

GALKIN, V.A.

Development of the clinical views of Moscow psychiatrists in the 19th century; pre-Korsakov period of the Moscow school of psychiatrists. Trudy 1-go MMI 34:74-82 '64.
(MIRA 18:11)

GALKIN, V.A.; TARASOV, K.Ye., dotsent

Significance of the classification of diseases in diagnosis.
Trudy 1-go MMI 37:157-163 '65.

(MIRA 18:8)

SOBOLEV, V.R.; GAIKIN, V.A.; BRODINOVA, N.S.

Expedient methods for the administration of tetracycline in treating chronic cholecystitis. Antibiotiki 10 no.2:173-176 F '65. (MIRA 18:5)

1. Kafedra mikrobiologii (zav. - deystvitel'nyy chlen AMN SSSR prof. Z.V.Yermol'yeva) TSentral'nogo instituta usovershenstvovaniya vrachey i kafedra fakul'tetskoy terapii (zav. - prof. A.G. Gukasyan) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

MASLIYEV, A.T.; GALKIN, V.A.

Results of using hypnosis in the treatment of dyskinesias of the biliary tract. Trudy 1-go MMI 34:464-470 '64.
(MIRA 18:11)

1. Kafedra psikhiatrii (zav. - zasluzhennyy deyatel' nauki prof. V.M. Banshchikov); kafedra fakul'tetskoy terapii sanitarnogo i vechernego fakul'teta (zav. - zasluzhennyy deyatel' nauki prof. A.G. Gukasyan) 1-go Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

GALKIN, Viktor Dmitriyevich; OBIDAROV, Vasiliy Nikolayevich; MEZIVETSKIY, Ya.P., inzh., retsenzent; DUNAYEV, P.F., kand.tekhn.nauk, red.; MOROZOVA, M.N., red.izd-va; DOBRITSYNA, R.I., tekhn.red.; GORDEYEVA, L.P., tekhn.red.

[Effective dimensioning and indication of tolerances in mechanical drawings] Ratsional'naia prostanovka razmerov i dopuskov na chertezhakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1960. 150 p. (MIRA 13:7)
(Mechanical drawing)

GALKIN, V.G., inzh.

Effect of the deviation of some parameters of d.c. traction motors on the changes in the value of the reactive electromotive force. Trudy OMIIT 40:99-112 '63. (MIRA 18:8)

GALKIN, V.I. (Moscow)

ASD therapy in pulpitis. Stomatologiia no.6:18-21 '53. (MLRA 7:1)
(Teeth--Diseases) (Tissue extracts)

LYAKH, V.M., inzh.; GALKIN, V.I., inzh.

Results of testing new beet cultivators. Mekh. i elek. sots. sel'khoz. 21 no.4:53-57 '63. (MIRA 16:9)

1. Ukrainskaya mashinoispytatel'naya stantsiya.
(Cultivators)

GALKIN, V.G. (Petrozavodsk)

Physical development of Petrozavodsk school children and methods for improvement in the light of new problems. Sov. zdrav. 19 no.6: 51-55 '60. (MIRA 13:9)
(PETROZAVODSK--CHILDREN--GROWTH)

GALKIN, V.G., inzh.

Method for the control of the position of the neutral in NB-406 traction engines. Elek. i tepl.tiaga no.8:27-28 Ag '63. (MIRA 16:9)

(Electric railway motors)

GAIKIN, V.G., inzh.

Testing of a.c. machines. Elek.i tepl.tiaga 7 no.1:24-25 Ja '63.
(MIRA 16:2)

(Electric machinery—Testing)
(Electric locomotives—Maintenance and repair)

GALKIN, V. I. (Chita)

Slow consolidation of a fracture of the shin in a patient whose spleen has been resected. Ortop.travm. i protez. 17 no.6:117 M-D '56. (MLRA 10:2)

(TIBIA--FRACTURES) (SPLEEN--SURGERY)

GALKIN, V.I.

Ice thrusts onto the shores of Lake Baikal. Priroda 50 no.1:82-83 Ja '61. (MIRA 14:1)

1. Baykal'skaya limnologicheskaya stantsiya.
(Baikal Lake—Ice on rivers, lakes, etc.)

GALKIN, V. I.

Glaciation on the banks of Lake Baikal. Trudy VSGI SO AN SSSR no.3:50-59 '61. (MIRA 15:10)

(Baikal Lake--Moraines)

LEBEDIK, A.I.; GALKIN, V.I.; ROGINSKIY, G.I.; BUD'KO, V.A., red.; GUREVICH, M.M., tekhn. red.; TRUKHINA, O.N., tekhn. red.

[Work like Vladimir Svetlichnyi does] Rabotat' kak Vladimir Svetlichnyi. Moskva, Izd-vo sel'khoz. lit-ry, zhurnalov i plakatov, 1961. 70 p. (MIRA 14:11)

(Sugar beets)

LEBEDNIK, A.I.; GALKIN, V.I.; ROGINSKIY, G.I.

[Work as Vladimir Svetlichnyi does]Rabotat' kak Vladimir Svetlichnyi. Kishinev, Partiinoe izd-vo TsK KP Moldavii, 1962. 48 p. (MIRA 16:3)
(Sugar beets)

BUDKO, A.I.; GALKIN, V.I.; YEGOROV, G.A.; DMITRIYEV, I.N., red.; PEVZNER, V.I., tekhn. red.; DEYEVA, V.M., tekhn. red.

[School of Vladimir Svetlichnyi] Shkola Vladimira Svetlichnogo. Moskva, Sel'khozizdat, 1962. 95 p. (MIRA 15:7)
(Sugar beets)

GALKIN, V.I. [Halkin, V.I.]

One centner of sugar beets requires 13, 4 man-minutes. Mekh. sil'. hosp. 13 no.4:3-5 Ap '62. (MIRA 17:3)

1. Rukovoditel' laboratorii Kubanskogo nauchno-issledovatel'skogo instituta ispytaniya mashin.

GALKIN, V.I.; MARKOV, N.N.

Auger core drilling without lifting the auger string. Trudy TSVB no.5:82-87 '62. (MIRA 18:7)

GALKIN, V.M., inzh.

Changes in the ground water cycle at industrial sites. Prom. stroi. 39 no.11:18-19 '61. (MIRA 14:12)
(Water, Underground)

TEPLITSKIY, Ye.A., inzh.; [illegible], V.N., [illegible], Yu.I., arkhitektor

New layout for buildings of a synthetic rubber plant. Prom. stroi. 42 no.1:18-19 '65. (MIRA 18:3)

10 1210

28965
S/179/61/000/003/003/016
E031/E435

AUTHOR: Galkin, V.S. (Moscow)

TITLE: The investigation of the hypersonic flow round a flat plate in a viscous rarefied gas

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1961, No.3, pp.18-21

TEXT: The calculation of the drag coefficient of a semi-infinite flat plate which is thermally isolated in a hypersonic gas flow with slip is described. It is assumed that the domain of the flow between the attached strong shock and the plate consists of an inviscid zone and a laminar boundary layer. A strong interaction between the shock and the boundary layer is postulated. Then the effect of slip and the temperature discontinuity in the region where the boundary layer equations are applicable is only significant in the case of a strongly heated plate. As the temperature of the plate falls the density of the gas at the plate increases rapidly and the mean free path diminishes. Hence in the case of a strongly cooled plate, slip and a temperature discontinuity become important when the conception of a boundary

Card 1/2

layer is not applicable. In calculating the boundary layer the integral form of the equation of impulses is used with a linear velocity profile and the velocity of slip is taken into account. Five terms of an approximate solution obtained by the method of small perturbations for the case that $\gamma \ln 2 = 1$ in the neighbourhood of $\delta < 0$ and three terms in the region of $x = \infty$ are quoted. The first terms are the solutions in the absence of slip and the later terms are corrections for slip. The Prandtl number is taken as unity. Acknowledgments are expressed to M.N.Koran and A.A.Nikol'skiy for commenting on the results and to D.Kh.Tayusheva for carrying out the calculations. There are 5 references: 1 Soviet and 4 non-Soviet. The four references to English language publications read as follows:
Chapman S., Cowling T., The Mathematical theory of nonuniform gases. Cambridge, 1953; Lees L. Hypersonic flow, Fifth International Aeronaut. Conference, 1955, No.I., 241-276; Shen S.F. J.Math. and Phys. 1952, No.3; Schaaf S.A., Harbut F.C., Talbot L., Aroesty J. J.ARS 1959, No.7.

SUBMITTED: October 2, 1960

Card 2/2

34328

S/124/62/000/002/002/014
D234/D302

10,1200

AUTHOR: Galkin, V.S.

TITLE: On taking into account the molecular composition of air in determining the coefficients of aerodynamic forces and the temperature of the body in a free-molecule stream at higher supersonic speeds

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 2, 1962, 21, abstract 2B121 (Inzhenernyy zh. - formerly Inzhenernyy sb. - 1961, 1, no. 1, 175-176)

TEXT: In the case of a free-molecule stream of a gas mixture, the calculation of mass, momentum and energy transport must, generally speaking, be carried out separately for each gas component and the results are then added. It is shown in the paper that in calculating the aerodynamic forces and the flow of kinetic energy of the particles moving towards the body in case of large velocities of the free-molecule stream, ($v_\infty / c \geq 10$, v_∞ being the macroscopic velocity and c the most probable

Card 1/2

S/124/62/000/002/002/014
D234/D302

On taking into account the ...

velocity of thermal motion of the molecules) the air can be considered as a single-component gas with the same density, temperature and mean molecular weight. The investigation is carried out under the condition of diffuse reflection of the particles from the body and the coefficient of accomodation $\alpha = 1$. [Abstracter's note: Complete translation].

Card 2/2

43145
S/124/62/000/008/005/030
I006/I242

AUTHOR: Galkin, V.S.

TITLE: The limits of applicability of the relaxation model of Bolzmann's kinetic equation

PERIODICAL: Referativnyy zhurnal, Mekhanika, no.8, 1962, 22 abstract 8B134. (Inzhenernyy zh., v.1, no.3, 1961, 153-156)

TEXT: In the solution of problems of aerodynamics of rarefied gases with the aid of Bolzmann's kinetic equation, great difficulties are encountered due to the complicated form of this equation. Simplified models of Bolzmann's equation are therefore frequently used, the simplest being the relaxation model $\frac{df}{dt} = \frac{fo-f}{\tau}$

Card 1/3

S/124/62/000/008/005/030
I006/I242

The limits of applicability of...

where f- the unknown distribution function, fo - the Maxwell distribution function, τ - relaxation time equal to μ/p (μ - viscosity coefficient, p - pressure). In this work the limits of applicability of the relaxation model are illustrated by the example of a gas slip flow. Here the gas slips along a plane in one direction and a constant gradient of the macroscopic velocity u, parallel to the plane, is maintained in the y-direction, perpendicular to the plane: du/dy = const. The system of equations of kinetic moments, derived from the relaxation equation, is solved for this purpose, and this solution is compared with the known solution of the exact system of equations of kinetic moments. Only moments of third order partition functions Qijk are considered. The equations of kinetic moments are obtained by multiplying the equation by the product of a

Card 2/3

21351
S/040/61/025/006/019/021
D299/D304

10.1000

AUTHORS: Galkin, V.S., and Gladkov, A.A. (Moscow)

TITLE: On the lifting force at hypersonic speeds

PERIODICAL: Prikladnaya matematika i mekhanika, v. 25, no. 6, 1961, 1138 - 1139

TEXT: It is established that the lifting force of many types of bodies (wedges, cones, etc.) is negative at hypersonic speeds for any values of Knudsen's number and for any angle of attack α ($0 < \alpha \leqslant \pi/2$). A very simple case is considered: Free-molecule flow past a wedge with semiangle δ; the flow velocity $V \gg c$, i.e. $S = V/c \gg 1$, where c is the most probable thermal velocity of the oncoming molecules. The lifting force of the wedge is

$$Y \approx \sin 2\alpha \cos 2\delta \text{ for } \delta > \alpha, \quad Y \approx \sin 2(\delta+\alpha) \text{ for } \delta \leqslant \alpha.$$

Then the case $S \ll 1$ is considered. The conclusion is reached that for any S, one can find values of δ, larger than some $\delta = \varphi$, for

Card 1/2

On the lifting force at ...

which the lifting force of an infinite wedge is negative. With $S > 2$, when the base pressure can be neglected, this conclusion is extended to an actual wedge of finite length. An exception to this rule are cylinder- and plate shaped bodies under angle of attack, for which $Y \geqslant 0$. In the case of hypersonic velocities, the above results are particularly noticeable at large values of the ratio of the temperature T_r of reflected molecules to the temperature T of the undisturbed flow. It can be readily shown that the conclusion arrived at, (i.e. negative lifting force for any α $(0 < \alpha \leqslant \leqslant \pi/2)$), is also valid for hypersonic flow of a continuous medium, when the pressure distribution over the body can be calculated by Newton's theory. In this connection, a simple example is considered: nonviscous hypersonic flow past a wedge. One arrives at the formula

$$Y \approx \alpha \sin \delta(2 - 3 \sin^2\delta) \text{ for } \delta > \alpha$$

for the lifting force. Hence it can be shown that $Y < 0$ for $0 \leqslant \alpha \leqslant \pi/2$, if $\sin \delta \geqslant \sqrt{2/3}$. The conclusion about the negative lifting force is valid for any type of reflection in free-molecule flow.
There is 1 figure.
SUBMITTED: July 11, 1961 Card 2/2

3P096

S/040/62/026/003/020/020
D407/D301

AUTHOR: Galkin, V.S. (Moscow)

TITLE: On the lift force in free-molecule flow

PERIODICAL: Prikladnaya matematika i mekhanika, v. 26, no. 3, 1962, 567

TEXT: In V.S. Galkin, and A.A. Gladkov (Ref. 1: O pod "yemnoy sile pri giperzvukovykh skorostyakh, PMM, 1961, v. 25, no. 6) it was shown that if the forces, acting at the base of wedges, cones, etc. are neglected, then the lift-force of these bodies in free-molecule flow can be negative for any angle of attack ($0 < \alpha \leq \pi/2$), and criterion $\sigma = V/c$ (where V is the velocity of the body and c the most probable thermal velocity of the oncoming molecule-flow). Below, it is shown that this conclusion applies also to certain bodies of finite length, when the forces acting at their base are taken into account. As a very simple example, flow past a symmetrical wedge of finite length with wedge-angle δ, is considered. A negative lift force is equivalent to the following formulation: The value $\delta = \delta_0$

Card 1/2

On the lift force in free-molecule flow

has to be determined from the condition $dC_y/d\alpha = 0$ for $\alpha = 0$, where C_y is the lift coefficient of the wedge. Formulas for the pressure p and the tangential stress τ, acting on the surface-element of the wedge, are derived. From these formulas, one obtains the lift coefficient of the surface element and the lift coefficient of the wedge. Hence the sought-for condition:

$$\left(\sqrt{T}-\frac{2\vartheta}{\sqrt{\pi}}\frac{1-\sin^2\delta}{\sin\delta}\right)\exp(-\vartheta^2\sin^2\delta)-\sqrt{T}\exp(-\vartheta^2)+ \qquad (3)$$
$$+[1+\operatorname{erf}(\vartheta\sin\delta)]\left(1-\vartheta\sqrt{\pi T}\frac{1-2\sin^2\delta}{\sin\delta}\right)-(1-\operatorname{erf}\vartheta)(1-\vartheta\sqrt{\pi T})=0$$

where T (the ratio of the temperature of reflected molecules to the static temperature of the oncoming flow) is assumed as constant. The solution of this equation is plotted on a figure. With large values of ϑ, one obtains the solution $\sin\delta_0 \approx 1/\sqrt{2} - (4\vartheta\sqrt{\pi T})^{-1}$, which is sufficiently accurate for $\vartheta \geqslant 3$, $T \geqslant 1$. Thus, δ_0 decreases considerably with ϑ. There is 1 figure.

SUBMITTED: December 6, 1961

Card 2/2

10.1300

40029
S/258/62/002/002/003/018
I028/1228

AUTHOR: Bogacheva, A. A. and Galkin, V. S. (Moscow)

TITLE: Strong interaction on a plate with allowance for sliding and partition temperature jump

PERIODICAL: Inzhenernyy zhurnal, v. 2, no. 2, 1962, 231–238

TEXT: The problem of the motion of an ideal gas in the laminar boundary by a plane half-infinite plates under conditions of strong interaction between the boundary layer and the hypersonic non-viscous flow, is solved for a zero angle of attack with allowance for sliding and a gas temperature jump at the wall. The rarefaction and entropy effects accompanying this flow can be studied separately by varying suitably the boundary conditions for the boundry layer equations. It is assumed that the viscosity is a linear function of T, and that $Pr = 1$. The pressure is calculated using the method of tangential wedges. The equations of the boundary layer and the boundary conditions are written in non-dimensional variables: systems of equations and corresponding boundary conditions, in the zero and first approximations are obtained from them. The zero and first approximations were solved simultaneously on a fast computer, and some rounded results are presented in tables and graphs. The following cases are cosidered: $T_w/T_0 = 1$ (insulated plate), 0.6, 0.2 (cooled plate); $\gamma = 1.4$, 5/3 (γ = specific-heat ratio, T_w = wall temperature, T_0 = stagnation gas stream temperature). The results show that: a) for $T_w/T_0 = 1$ the sliding increases the gas velocity and decreases its temperature, b) the role of the temperature jump increases with the decrease of T_w/T_0, c) for $T_w/T_0 \leqq 1$ the sliding and

Card 1/2

the temperature jump decreases the pressure, the dislodgment thickness, the local coefficient of frictional resistance and the coefficient of heat transfer from the gas to the plate. It is established that the representation of the velocity profile by a polynomial of the fourth power is sufficiently accurate, and that a linear profile can be used only for very rough calculations. There are 3 figures and 4 tables.

SUBMITTED: February 12, 1962

GALKIN, V.S. (Moskva)

Slip effects in hypersonic slightly rarefied flow about bodies.
Inzh. zhur. 3 no.1:27-36 '63. (MIRA 16:10)

(Aerodynamics, Hypersonic)

GALKIN, V.S. (Moscow):

"One-dimensional unsteady solution of kinetic moment equations."

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

ACCESSION NR: AP4013395 S/0040/64/028/001/0186/0188

AUTHOR: Galkin, V. S. (Moscow)

TITLE: One dimensional nonstationary solution of equations of kinetic moments of monoatomic gas

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 1, 1964, 186-188

TOPIC TAGS: one dimensional solution, nonstationary solution, kinetic moment, monoatomic gas, Maxwell gas, viscosity coefficient, shift solution, relaxational kinetic equation, Mach number, Reynolds number

ABSTRACT: The author (Ob odnom klasse resheniy uravneniy kineticheskikh momentov Greda. PMM, 1958, t. XXII, vy*p. 3) gave a class of precise solutions for the equations of the kinetic moments of monoatomic Maxwell gas with no exterior forces. The density, the coefficient of viscosity, the pressure, the stresses and all the remaining moments of the distribution function of highest order depend only on time, while the components of macroscopic velocity also depend linearly on the Cartesian coordinates. The fundamental solutions of this class are shift solutions,

Card 1/2

ACCESSION NR: AP4013395

with whose help one can study the accuracy of the Chapman-Enskog method of the relaxational kinetic equation and the one-dimensional solution, decaying with time, considered in the present paper. The author is concerned basically with the applicability of the Chapman-Enskog method. "The author is grateful to M. N. Kogan and A. A. Nikol'skiy for their interest in this work." Orig. art. has: 2 figures and 9 formulas.

ASSOCIATION: none

SUBMITTED: 19Sep63 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: MM NO REF SOV: 003 OTHER: 002

Card 2/2

ACCESSION NR: AP4019966 S/0020/64/154/006/1297/1298

AUTHOR: Galkin, V. S.; Lady*zhenskiy, M. D.

TITLE: Computation of the boundary layer of a compressible fluid with slip boundary conditions

SOURCE: AN SSSR. Doklady*, v. 154, no. 6, 1964, 1297-1298

TOPIC TAGS: hydrodynamics, compressible fluid, slipping boundary condition, boundary layer, velocity discontinuity, slip, boundary condition, viscous flow

ABSTRACT: The authors investigated the effect of velocity discontinuities and temperature near the walls on the flow of a compressible fluid in the boundary layer on plane and axially-symmetrical bodies under conditions when the interference of the boundary layer with the nonviscous flow, the influence of the cross sectional curvature, and the like, can be considered independently from slipping. They have solved the problem by certain assumptions concerning the temperature at the boundary and by introducing the Dorodnitzy*n's variables. The

Card 1/2

ACCESSION NR: AP4019966

procedure is a generalization of the method used in the theory of non-compressible viscous flow in which the effect of velocity of slipping is taken into consideration by a shift of the y-coordinate which is proportional to the mean free path of gas molecules. Orig. art. has: no figures, 3 equations.

ASSOCIATION: none

SUBMITTED: 03Jul63 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 001

Card 2/2

L 63007-65 EWT(1)/EWP(m)/EWA(d)/FCS(k)/EWA(1) Pd-1

ACCESSION NR: AP5016271 UR/0258/65/005/003/0553/0555
533.6.011.8

AUTHOR: Galkin, V. S. (Moscow) 13 B

TITLE: Cylindrical Couette flow of a rarefied gas

SOURCE: Inzhenernyy zhurnal, v. 5, no. 3, 1965, 553-555

TOPIC TAGS: rarefied gas, Mach number, Knudsen number, Couette flow, Boltzmann equation, velocity distribution, Navier Stokes equation

ABSTRACT: The velocity distribution in a cylindrical Couette flow of a rarefied gas was calculated using Lees' kinetic theory approach. The inside wall is assumed to be rotating with the rate $\omega = V/r_0$, the outside wall is held stationary, and the Mach number is assumed to be small, $M \ll 1$. The velocity distribution function is given by

$$f = \frac{\rho}{m}\left(\frac{m}{2\pi kT}\right)^{3/2}(1 + \sqrt{2\kappa}\,MW\eta\cos\varphi)\exp(-\eta^2 - \xi_1^2),$$

and the solution of the Boltzmann equation is obtained using the Lees momentum technique. This yields for the velocity field

$$\frac{u_1 + u_2}{2} = \frac{1}{4K}\frac{\beta}{\delta}\left(\frac{1}{r} - r\right) + r\left(1 - \frac{\beta}{2}\right).$$

Card 1/2